

What is claimed is:

1. A broadband coaxial transmission line, comprising:  
  
joined segments of coaxial transmission lines, the segments being of substantially the same length; and  
  
a plurality of substantially identical first and second insulating supports, wherein the first insulating supports are positioned at flange joints within the joined segments and the second insulating supports are positioned within the joined segments at equidistant intervals from each other and equidistant from the first insulating supports, the distance between any of the insulating supports being approximately one half a wavelength of a frequency that is outside a channel band of an operating range of the transmission line.
2. The transmission line of claim 1, wherein the frequency is outside a UHF band.
3. The transmission line of claim 1, wherein the frequency is outside a VHF band.
4. The transmission line of claim 1, wherein the frequency is outside a FM band.
5. The transmission line of claim 1, wherein the frequency is outside a AM band.
6. The transmission line of claim 1, wherein the frequency is outside an IBOC band.
7. The transmission line of claim 1, wherein the frequency is outside a HF band.

8. The transmission line of claim 1, wherein the length of the transmission line segments is an integer multiple of the distance between any of the insulating supports.

9. A method for designing a broadband coaxial transmission line, comprising the steps of:

joining segments of substantially identical transmission lines of substantially identical lengths;

arranging a plurality of insulating supports within the joined segments, so that the insulating supports are substantially equidistant from each other and the distance between any of the insulating supports is approximately one half a wavelength of a frequency that is outside a channel band of an operating range of the transmission line.

10. The method according to claim 9, wherein the insulating supports are arranged with an equidistant separation that corresponds to approximately one half of a wavelength of a frequency that is outside a UHF channel.

11. The method according to claim 9, wherein the insulating supports are arranged with an equidistant separation that corresponds to approximately one half of a wavelength of a frequency that is outside a VHF channel.

12. The method according to claim 9, wherein the insulating supports are arranged with an equidistant separation that corresponds to approximately one half of a wavelength of a frequency that is outside a FM channel.

13. The method according to claim 9, wherein the insulating supports are arranged with an equidistant separation that corresponds to approximately one half of a wavelength of a frequency that is outside a AM channel.

14. The method according to claim 9, wherein the insulating supports are arranged with an equidistant separation that corresponds to approximately one half of a wavelength of a frequency that is outside an IBOC channel.

15. The method according to claim 9, wherein the insulating supports are arranged with an equidistant separation that corresponds to approximately one half of a wavelength of a frequency that is outside a HF channel.

16. The method according to claim 9, wherein the joined transmission line segments are of a length that is an integer multiple of the separation between supports.

17. A broadband coaxial transmission line, comprising:

joined segments of substantially equal length electrical signal transmitting means for transmitting a signal from a source to a load; and

a plurality of substantially identical supporting means for separating an inner conductor of the transmitting means from an outer conductor of the transmitting means, the supporting means positioned in the electrical signal means at substantially equidistant intervals, wherein the substantially equidistant intervals correspond to approximately one half a wavelength of a frequency that is outside a channel band of an operating range of the electrical signal transmitting means.

18. The broadband electrical signal transmitting means of claim 17, wherein the frequency is outside a UHF band.

19. The broadband electrical signal transmitting means of claim 17, wherein the frequency is outside a VHF band.

20. The broadband electrical signal transmitting means of claim 17, wherein

the frequency is outside a FM band.

20. The broadband electrical signal transmitting means of claim 17, wherein the frequency is outside a AM band.

21. The broadband electrical signal transmitting means of claim 17, wherein the frequency is outside a HF band.

22. The broadband electrical signal transmitting means of claim 17, wherein the frequency is outside an IBOC band.